Amendments to the Specification:

On page 1, please amend the paragraph starting on line 2 as follows:

--The present invention deals with a cantilever assembly ~~according to the independent patent claim~~. --

One page 3, please replace the paragraph starting on line 15 as follows:

--The present invention now suggests a cantilever assembly as described herein. ~~as specified in the independent patent claim. Advantageous embodiments are the subject of the dependent claims.~~ Also, the present invention suggests a process for the manufacture of such a cantilever assembly. --

On page 6, please amend the paragraph starting on line 7 as follows:

-- In a further embodiment of the cantilever assembly according to the instant invention, that portion of the support to which the cantilever is attached has a recessed shape, in particular a partly-octagonal shape, the said recessed or partly-octagonal shape narrowing in the direction towards the cantilever. A thus shaped portion of the support is sufficiently stiff on one hand while at the same time - due to its "narrowed" shape - it allows that a sample may be arranged tilted within a certain range relative to the cantilever or the support, respectively, without provoking a collision between the support and the sample during approaching the sample for a scan. --

On page 6, please amend the paragraph starting on line 19 as follows:

-- In still a further embodiment of the cantilever assembly according to the instant invention, the cantilever comprises a step-like portion which is arranged near that end

of the cantilever which is attached to the support. At the step-like portion the thickness of the cantilever on the front side of the cantilever (i.e. that side of the cantilever facing the sample) is substantially increased. The step-like portion enables one to very precisely define the length of the cantilever, since the length from the step towards the cantilever tip defines the length of the cantilever. The step can be manufactured with etching techniques (e.g. wet etching techniques or dry etching techniques) applied from the front side of the cantilever. This is particularly advantageous with respect to manufacture of the cantilever assemblies from so-called "silicon on oxide" wafers, as will be explained in more detail below. --

On page 7, please amend the paragraph starting on line 5 as follows:

-- In a still further embodiment of the cantilever according to the instant invention, the support comprises at least two steps, each step being provided with an edge. The edge of the first step of the support (that edge forming the "mask") is located [[the]] said predetermined distance from the back side of the cantilever tip, while the edge of the second step is located such that it does not obstruct application of the high reflectance material. –

On page 7, please amend the paragraph starting on line 27 and continuing on to page 8 as follows:

-- A further aspect of the instant invention deals with a process for manufacturing a cantilever assembly as described before. This process comprises applying from a source of a high reflectance material the area of the high reflectance material and the sloping boundary to the back side of the cantilever tip. The process further comprises using a sharp edge of the support of the cantilever assembly in order to limit the extensions of the area and of the boundary towards the support. While not being limited to small cantilevers, this process is particularly advantageous with regard to small cantilevers, since no separate mask is needed which must be precisely arranged. Rather, the edge functions as the "mask" and can be positioned sufficiently close to the

cantilever tip in the case of small cantilevers. –

On page 8, please amend the paragraph starting on line 12 and continuing through page 9 line 3 as follows:

-- In an embodiment of the process according to the instant invention, the edge of the support is located at a distance from the area on the back side of the cantilever tip. The source of the high reflectance material is also arranged at a distance from the edge of the support and has an opening having a diameter, through which the high reflectance material is applied. The distance of the edge of the support from the area on the back side of cantilever tip and the distance from the source to the edge of the support are determined such, that the condition

$$\Delta c / 1 = d / L$$

applies, wherein

Δc denotes the extension of the boundary of the area of the high reflectance material towards the support

1 denotes the distance of the edge of the support from the area of the high reflectance material,

d denotes the diameter of the opening of the source through which the high reflectance material is applied, and

L denotes the distance between the source and the edge of the support. --

On page 9, please amend the paragraph starting on line 9 as follows:

-- FIG. 1 shows a longitudinal section through an embodiment of the cantilever assembly according to the instant invention[[,]]; --

FIG. 2 shows a perspective view of the embodiment of the cantilever assembly

of FIG. 1[[,]];

FIG. 3 shows essentially the longitudinal section through the embodiment of the cantilever assembly of FIG. 1 together with a schematic representation of an aperture angle of the optical tracking system;

and

FIG. 4 shows a front perspective view of the embodiment of the cantilever assembly of FIG. 1, with a sample tilted relative to the cantilever. --

On page 13, please amend the paragraph starting on line 6 as follows:

-- In order to maintain the high quality factor of cantilever 10, cantilever 10 is provided with a step-like portion 100 which is arranged near that end of cantilever 10 which is attached to support 12. Step-like portion 100 is arranged a small distance away from the attachment location. At step-like portion 100, the thickness of cantilever 10 substantially increases on the front side of cantilever 10 - i.e. on that side of cantilever 10 facing downwards in FIG. 1. By providing step-like portion 100 the length of cantilever 10 is well-defined, since after having increased its thickness, that portion with the substantially increased thickness already functions as a support. Accordingly, the flexible part of cantilever 10 has a well-defined length, and in addition the attachment of the flexible part of cantilever 10 to the massive "support" is executed in the same material (silicon), thus avoiding a decrease of the quality factor. –

On page 14, please amend the paragraph starting on line 8 as follows:

-- Grooves 123a and 123b as well as recess 123c and their edges are very precisely manufactured at very precise locations. Accordingly, in a first step optical tracking system focuses on the upper surface of step 121 in order to start a guiding and calibration run. The following explanation offers one out of a number of possibilities how such a guiding and calibration run of the optical system may look like. –

On page 15, please amend the paragraph starting on line 13 as follows:

-- The displacement units now move optical tracking system (i.e. beam 20) back to continued longitudinal axis 101 and subsequently continues to move optical tracking system in a direction perpendicularly to arrows 210 or 211, i.e. in the direction of arrow 212 until beam 20 reaches the inner edge of recess 123c. The displacement units continue to move optical tracking system across recess 123c in the direction of continued longitudinal axis 101 until beam 20 reaches the outer edge of recess 123c. Again, optical tracking system counts the number of steps needed to move beam 20 from the inner edge of recess 123c to the outer edge of recess 123c. Since the distance between inner and outer ~~edge~~ edges of recess 123c is precisely known, the optical tracking system now knows the distance to which one step of the stepper motor corresponds in the direction of arrow 212. Optical tracking system is now calibrated in the plane of upper surface of step 120b and can be guided on continued longitudinal axis 101. –

On page 17, please amend the paragraph starting on line 1 as follows:

-- In order to substantially accelerate guiding and focusing the optical tracking system to the back side of cantilever tip 11 after calibration, the distance between inner and/or outer ~~edge~~ edges of recess 123c and edge 121a of step 121 is known, as well as the distance between upper surface of step 121 and upper surface of step 120. Finally, the length of step 120 is also known, as well as the distance between the upper surface of step 120 and the back side of cantilever 10. Finally, the length of cantilever 10 is known, so that optical tracking system can be quickly guided and focused to a target point in the three-dimensional space, which is located at least in relatively close vicinity of area 110. The final exact positioning and focusing on area 110 can then be performed in a comparatively short time, since optical tracking system must only "search" in a very small section of the three-dimensional space, since it can be quickly guided to a point in the three-dimensional space, which is located at least in close vicinity of area 110. As outlined above, the calibration structure shown in FIG. 2 has

only been described by way of example and other suitable calibration structures can be used as well. –

On page 18, please amend the paragraph starting on line 3 as follows:

-- FIG. 4 shows a front perspective view of cantilever assembly 1, together with a sample 3 that is slightly tilted by an angle .gamma. relative to cantilever 10 and support 12. From FIG. 4 another problem usually encountered in the scanning of samples becomes apparent. This problem is related to the tilted arrangement of sample 3 relative to cantilever 10 and support 12, and will now be explained. Cantilever assembly 1 may approach sample 3 from behind as is shown in FIG. 4. Cantilever 10 is attached to support 12 comprising steps 120 and 121. In order now to avoid a collision between support 12 and sample 3 (or more precisely between step 120 of the support and sample 3) during approaching sample 3, step 120 of support 12 (which is that portion of support 12 to which the cantilever is attached) has a recessed shape, in the shown embodiment a partly-octagonal shape. The ~~said~~ partly-octagonal shape narrows in the direction towards cantilever 10. --